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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/556,096

11/09/2005

Mi-Hye Oh

2017-044

4764

52706

7590

08/03/2009

IPLA P.A.

3580 WILSHIRE BLVD.

17TH FLOOR

LOS ANGELES, CA 90010

EXAMINER

PO, MING CHEUNG

ART UNIT

PAPER NUMBER

1797

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DELIVERY MODE

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/556,096	<b>Applicant(s)</b> OH ET AL.	
	<b>Examiner</b> MING CHEUNG PO	<b>Art Unit</b> 1797	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 April 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. This is the response to amendment for application 10/556096 filed on 04/27/2009.
2. Claims 1-20 are pending and have been fully considered.
3. The 3.5. U.S.C. 112 rejections of claims 4, 5, 19, and 20 have been withdrawn in view of applicant's amendments.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 3-7, 10, and 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mi-Hye (Patent Abstract and machine translation of KR2002-0075758).
6. Regarding claims 1,3, 4, 10, Mi-Hye teaches in the abstract an agent for **removing and cleaning dust, soot , clinker, sludge using catalysts provided to reduce fuel consumption and contaminant, increase burning rate, combustion efficiency and thermal efficiency by inducing complete combustion of internal combustion engines**. The agent is a composition that is formed from the mixing of **446-1944 kg of an amine stabilizer such as TEA, 406-1710 kg of hydrogen peroxide, 885 to 2928 kg of sodium hydroxide, and 562 to 2543 kg of borax with**

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**water.**

MI-Hye does not seem to explicitly state what parts by weight of the total fuel additive composition each component of the agent comprises.

However, it would be obvious to one of ordinary skill in the art to use 8 to 40 parts by weight of hydrogen peroxide, 8 to 40 parts by weight of an amine-based stabilizer, 10 to 40 parts by weight of borax, and 16 to 40 parts by weight of sodium hydroxide since it has been held where the general conditions are known, optimization or workable ranges involve only routine experimentation to one of ordinary skill in the art. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)

Regarding claim 5, Mi-Hye does not seem to explicitly state that proportion of the fuel additive composition and the water ranges from 1:2 to 1:50 by weight.

However, Mi-Hye appears to teach in paragraph 4 of page 3 that the additive is mixed with water in proportion of 1:5-20.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Regarding claims 6 and 7, Mi-Hye also teaches that catalysts such as **50-900k g of potassium carbonate or 50-800 kg of calcium carbonate** may be added.

Regarding claim 8, Mi-Hye further states that the agent may be mixed with **methyl alcohol.**

Regarding claims 12-17, Mi-Hye teaches that the agent may be used to remove and clean dust, soot, clinker, sludge and PM materials of a combustion engine.

Regarding claim 18, Mi-Hye teaches that the agent may be used for **diesel fuel.**

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Regarding claims 19-20, Mi-Hye does not seem to explicitly teach the parts by weight of the fuel additive composition per 100 parts by weight of the fuel.

However, Mi-Hye does appear to teach an example in paragraph 6 of page 3 that suggests the fuel additive composition was mixed with **coal (solid fuel)** in proportions of 1-8:500-2000.

It would be obvious to one of ordinary skill in the art to use 0.02 to 0.5 parts by weight of the fuel additive composition per 100 parts by weight of the fuel since it has been held that where the general conditions are known, optimization or workable ranges involve only routine experimentation to one of ordinary skill in the art. In re Aller, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955)

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

7. Claims 1-5, 10-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over GOLDSMITH (U.S. 2,863,835) in view of LETARTRE (USPGPUB 20030215441).

GOLDSMITH teaches in lines 20 – 41 a solution formed by  $\frac{1}{4}$  **mole or 95.25 parts borax decahydrate, and  $\frac{1}{2}$  mole or 20 parts sodium hydroxide dissolved in 175 parts water. 68 parts of 50%  $H_2O_2$  or 34 parts of  $H_2O_2$ , Hydrogen peroxide, is then added** after the resulting solution is cooled to 10 – 11 C.

GOLDSMITH further teaches in lines 44 – 48 of column 3 that a well known stabilizer may be added preferably as soon as the preborate has started to avoid any unnecessary breakdown.

GOLDSMITH does not seem to explicitly state an amine based stabilizer.

However, LETARTRE states in paragraph 28 **stabilizing agents such as diethanolamine**.

It would be obvious to one of ordinary skill in the art to add diethanolamine as a stabilizer before adding hydrogen peroxide to prevent hydrogen peroxide from decomposing when added to the solution of borax and sodium hydroxide dissolved in water.

The motivation to do so can be found in paragraph 28 of LETARTRE that teaches that hydrogen peroxide may be stabilized with diethanolamine.

GOLDSMITH and LETARTRE also does not seem to explicitly teach the amount of borax from 10 to 40 parts by weight of borax.

However, it would be obvious to one of ordinary skill in the art to modify the amounts of borax used with a reasonable expectation of success.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

Regarding claim 11, it is well known that borax and sodium hydroxide dissolves in water at a temperature ranging from 50 to 95 C.

Claims 12 – 17 are directed towards intended uses for the fuel additive. Applicant is reminded that if a composition is physically the same, it must have the same properties. See MPEP 2112.01 II.

8. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over GOLDSMITH (U.S. 2,863,835) in view of LETARTRE (USPGPUB 20030215441 and further in view of LUTZ (U.S. 4,131,562).

The above discussion of GOLDSMITH is incorporated herein by reference.

Regarding claims 6 and 7, modified GOLDSMITH does not seem to explicitly teach a catalyst selected from the group consisting of potassium carbonate, calcium carbonate, and sodium carbonate.

However, LUTZ teaches a particulate peroxygen compound selected from the group consisting of sodium carbonate peroxide and sodium perborate coated with 0.1 to 3.0 weight percent of an ethyl oxide-derivative stabilizing material (**surfactant**) in lines 1 – 6 of column 9.

It is well known that sodium carbonate peroxide may be prepared by reacting **hydrogen peroxide** with **sodium carbonate** alone or in the presence of a stabilizer. LUTZ teaches the stabilizer that numerous stabilizing agents have been proposed such as diaminetetraacetic acid (**amine based stabilizer**) that is suggested in United States Patent 3,860,694.

It would be obvious to one of skill in the art to add sodium carbonate that LUTZ teaches to the solution that GOLDSMITH teaches to form sodium percarbonate.

The motivation can be found in lines 9 – 17 of LUTZ where LUTZ teaches sodium peroxide may be used similarly to sodium perborate as a source of active oxygen in detergent formulations.

LUTZ does not seem to explicitly teach the ratio of fuel additive composition to the catalyst.

However, it would be obvious to one of ordinary skill in the art at the time of the invention to use any amount of sodium carbonate with a reasonable expectation of

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success.

Regarding claims 8 and 9, LUTZ teaches the storage stability of peroxygen compounds may be improved by **coating** sodium perborate and sodium carbonate peroxide with certain stabilizing materials such as certain polyethoxy alcohols in lines 13 – 26 of column 2 (**surfactant**).

LUTZ does not seem to explicitly teach the ratio of fuel additive composition to the surfactant.

However, it would be obvious to one of ordinary skill in the art at the time of the invention to use any amount of surfactant with a reasonable expectation of success.

Therefore, the invention as a whole would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made.

### ***Response to Arguments***

9. Applicant's arguments filed 04/27/2009 have been fully considered but they are not persuasive. Applicant argues that the prior art of GOLDSMITH and LETARTE is directed toward a bleaching composition and antimicrobial compositions, respectively, that are unrelated to fuel additive compositions. Examiner disagrees. Applicant is directed toward MPEP 2112 1. Something which is old does not become patentable upon the discovery of a new property. Applicant further argues that it would not have been obvious to combine the references of GOLDSMITH and LETARTE based on the fact that GOLDSMITH wanted to obtain a “granular” thing while LETARTE wanted to obtain a “resolved” thing. Applicant further argues that the combination of GOLDSMITH and LETARTE destroys the purpose of primary reference GOLDSMITH Examiner



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disagrees. Examiner is not suggesting combining the different compositions together. Examiner is relying on LETARTE for a teaching that diethanolamine may be used as a stabilizing agent for hydrogen peroxide. It would be obvious to one of ordinary skill in the art to use a known stabilizer for hydrogen peroxide.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MING CHEUNG PO whose telephone number is (571)270-5552. The examiner can normally be reached on 9:00 - 4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ming Cheung Po  
Patent Examiner

/Cephia D. Toomer/

Primary Examiner, Art Unit 1797